

EXHIBIT 7

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

-----X
FRANKLIN BUONO,

Plaintiff,

v.

POSEIDON AIR SYSTEMS, VICTORY AUTO
STORE, INC., VICTORY AUTO STORES, INC.
d/b/a POSEIDON AIR SYSTEMS,
WORTHINGTON INDUSTRIES, INC., AND
TYCO FIRE PRODUCTS LP,

Defendants.

Civil Action No. 1:17-cv-05915 (PMH)

-----X
TYCO FIRE PRODUCTS LP,

Third-Party Plaintiff,

v.

OPRANDY'S FIRE & SAFETY INC.,

Third-Party Defendant.

-----X
**DECLARATION OF KURT
JULIANO**

-----X

I, Kurt Juliano, hereby declare as follows:

1. I was retained by counsel for Tyco Fire Products, LP, to opine on standards of practice in the fire-suppression industry in relation to the rupture of the fire suppression test tank that occurred on February 12, 2016, at Oprandy's Fire and Safety Equipment, Inc., in Middletown, New York.

2. In connection with my analysis, I provided a report entitled "Expert Report of Kurt Juliano" on April 16, 2020. A true and correct copy of my report is attached hereto as Exhibit A.

3. The contents of this report are true and correct to the best of my knowledge and belief.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Executed on this 13th day of February, 2021, at Buffalo, NY.



Kurt Juliano

EXHIBIT A

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

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FRANKLIN BUONO,	:	
	:	
<i>Plaintiff,</i>	:	Civil Action No. 1:17-cv-05915 (NSR)
	:	(LMS)
v.	:	
	:	
POSEIDON AIR SYSTEMS, VICTORY AUTO	:	
STORE, INC., VICTORY AUTO STORES, INC.	:	
d/b/a POSEIDON AIR SYSTEMS,	:	EXPERT REPORT OF KURT
WORTHINGTON INDUSTRIES, INC., AND	:	JULIANO
TYCO FIRE PRODUCTS LP,	:	
	:	
<i>Defendants.</i>	:	
	:	
-----	-X	
TYCO FIRE PRODUCTS LP,	:	
	:	
<i>Third-Party Plaintiff,</i>	:	
	:	
v.	:	
	:	
OPRANDY'S FIRE & SAFETY INC.,	:	
	:	
<i>Third-Party Defendant.</i>	:	
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*Expert Report of Kurt Juliano***I. INTRODUCTION**

I was retained by Williams & Connolly LLP to opine on standards of practice in the fire-suppression industry, and in particular as they pertain to pre-engineered fire-suppression systems, the Kitchen Knight and Kitchen Knight II systems,¹ and filling test and agent cylinders. My opinions are in response to the January 8, 2020, report of Tom Taranto of Data Power Services, LLC, are to a reasonable degree of technical certainty, and are based on my experience and education, standards of practice in the industry, applicable laws, regulations, and guidelines, and the materials listed in Appendix B. I reserve any and all rights I have to offer testimony and opinions in this matter, including any right I have to amend, modify, supplement, or clarify this report as facts and circumstances warrant. If asked, I will be prepared to present a basic tutorial to explain the concepts related to the opinions set forth in this report, as well as to provide further background on the fire-suppression industry, commercial fire-suppression systems, Kitchen Knight systems, cylinder-filling procedures, and test and agent cylinders. I may use demonstrative exhibits to summarize or explain my testimony, and reserve any right I have to do so.

What follows is a summary of a number of my opinions in this matter. This list is not exhaustive, and should not be read as restricting the opinions set forth in this report.

1. It is a basic premise in the fire-protection industry that *only* individuals certified in particular fire-suppression systems should service or maintain such systems. It is well-known in the industry and among Authorized Distributors of Kitchen Knight Systems that only Authorized Distributors and in particular, individuals who hold current product training certification should be involved in servicing Kitchen Knight Systems, including in filling test and agent cylinders.
2. The fire-protection industry is highly regulated. As a result, individuals in the industry are expected to be familiar with fire codes and other applicable guidelines and regulations, including from the Department of Transportation, OSHA, the National Fire Protection Association, and the Compressed Gas Association.
3. The practices and actions of Oprandy's and Christopher Foust that led to the incident at issue were contrary to basic premises of safety in the industry.
4. The hazards posed by using a high-pressure system to fill a low-pressure cylinder, as well as the hazards of overfilling in general, would have been obvious to individuals with proper training or experience as authorized servicers in the industry.
5. Authorized Distributors—and indeed, anyone with proper training or experience as an authorized servicer of a pre-engineered fire-suppression system—would have understood the service pressure of the cylinder at issue.

¹ Unless explicitly stated otherwise, my opinions apply to both the Kitchen Knight and Kitchen Knight II systems.

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6. Mr. Taranto's report neglects to consider that permitted users of the Kitchen Knight test cylinder must comply with and have, at a minimum, basic understandings of regulations and industry standards.
7. To individuals in the industry, the markings on the test cylinder are clear and informative, and more than suffice to guard against the risk of overfilling.
8. The Kitchen Knight manuals provide sufficient information to ensure that individuals safely and reliably perform the maintenance and recharge of Kitchen Knight systems. Only Authorized Distributors should be involved in servicing Kitchen Knight systems, and Authorized Distributors are well aware that the Kitchen Knight manual is complementary to many industry standards and regulations.
9. Authorized Distributors are aware that all individuals involved in servicing Kitchen Knight systems must be properly trained, including in how to properly refill cylinders. The manufacturer's system-specific training is complementary to other mandatory training in the industry.

II. BACKGROUND AND QUALIFICATIONS

I have been in the fire-protection industry for over twenty-five years. I began working as a Fire Protection Technician in 1995 for Lane Fire & Safety, where I inspected and installed various commercial fire-suppression systems. Shortly after beginning at Lane Fire & Safety, I earned certifications in the design, installation, recharge, and maintenance of several systems, including the Ansul R-102 Restaurant Fire Suppression System, Range Guard Restaurant Fire Suppression System, Badger Industry Guard Certified Fire Suppression System, Pyro-chem Kitchen Knight Restaurant Fire Suppression Systems, and Kidde Wet & Dry Chemical Systems. During my time as a Fire Protection Technician, I was tasked with performing acceptance tests on new installations with Code Enforcement Officials and inspecting systems that protected restaurant hoods, fuel islands, paint spray booths and storage areas. Other maintenance on these systems included repairs, modifications, recharges and hydrostatic pressure tests. I also provided both classroom and controlled live-burn fire extinguisher training & demonstrations to end users. Other duties included monthly inspections and annual maintenance on many types of hand-portable & wheeled unit fire extinguishers.

In 2005, I took a job as a Senior Account Manager at UTC Fire & Security. I worked with all matter of users and consumers of commercial fire-suppression systems. I also trained sales representatives, including by instructing them on various commercial fire-suppression systems. I designed and sold many types of pre-engineered fire suppression systems. Markets included hospitality, healthcare, education, and manufacturing. I evaluated customer sites and sold complete Life Safety inspection and maintenance solutions including fire suppression, sprinkler and fire alarm packages.

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In October 2008, I joined All State Fire & Safety as a Vice President and Partner. I oversee all aspects of sales of commercial fire-suppression systems, and am in constant communication with training staff and field technicians across multiple divisions. I am also responsible for communicating with various stakeholders about fire-suppression systems. I am the company's lead liaison with manufacturers and manufacturer reps including: Ansul, Pyro-Chem, Range Guard, Amerex, Auto-call, Viking, Reliable, and Avigilon.

I have been heavily involved in developing and analyzing safety standards in the industry. Since 2015, I have served as a Principal Member of the National Fire Protection Association (NFPA) Dry and Wet Chemical Extinguishing Systems Technical Committees for NFPA 17 (Standard for Dry Chemical Extinguishing Systems) and 17A (Standard for Wet Chemical Extinguishing Systems). Based on this position and my years in the industry, I am very familiar with the safety standards that apply to commercial fire-suppression systems.

III. COMMERCIAL FIRE-SUPPRESSION SYSTEMS

Commercial fire-suppression systems are designed to protect businesses from fires. There is high demand for such systems in restaurants kitchens, where the risk of fire is high. As a result, several companies have developed pre-engineered systems for suppressing fires, many specific to kitchens. Pre-Engineered Restaurant Fire Suppression Systems utilize a wet chemical agent specifically designed to suppress restaurant cooking fires. The system provides automatic actuation and can be manually actuated through a remote mechanical pull station. Upon actuation, the system discharges a pre-determined amount of agent to the duct, plenum, and cooking appliances. The agent acts to suppress fires in three ways:

- 1) The chemical chain reaction causing combustion is interrupted by both the agent itself and the resulting steam formation.
- 2) The agent cools the fire bringing it below auto-ignition temperature.
- 3) The agent reacts with hot grease forming a soap-like layer (saponification) that helps prevent the escape of combustible vapors, thus preventing re-ignition.

Pre-engineered wet chemical fire-extinguishing systems cannot function without active and consistent maintenance and servicing by qualified individuals. Such servicing and maintenance must be done periodically and in particular ways to comply with regulations and avoid safety issues. As a result, all manufacturers of pre-engineered suppression systems have developed certification processes through which they recognize both the individuals and businesses who are authorized to service the systems. Manufacturers are very careful to ensure that only certified individuals service the systems. They often provide written warnings to that effect, restrict training and customer assistance to authorized servicers, and explicitly disclaim liability when servicing is performed by unauthorized individuals. Authorized servicers are often provided assistance through training, direct technical support from the company, and other informational resources. Unauthorized servicers are not. Manufacturer certification is critical to effectively servicing a system for many reasons, including:

- Bulletins/Standard Changes: Only Authorized Distributors have immediate access to Bulletins. A query from one manufacturer pulled up over 50 bulletins. While

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many bulletins are price adjustments and programs, others are of extreme high importance—manual revisions, discontinued parts, new design coverage and even replacement of cylinders. For example, one Kitchen Knight bulletin required cylinders to have a “collar” placed around neck of cylinder to prevent failure.

- Technical Assistance: Common practice among manufacturers is to assign a territory representative to the distributor and grant access to technical service through a toll-free phone number. This is valuable to all involved, including those involved in designing, installing, repairing, inspecting, recharging, or hydro-testing cylinders.
- Training: Only authorized servicers receive factory training and recommended procedures for the proper installation and maintenance of their individual system. Distributors and their trained technicians receive certificates documenting their knowledge of the products and their ability to service equipment properly. These certificates generally are not transferable from one company to another distributor.
- Warranties: Only authorized servicers can maintain the original install warranty that last up to six years, depending on manufacturer.

It is common knowledge—and indeed a basic premise—in the industry that *only* individuals and entities authorized to service particular fire-suppression systems should be involved in the servicing of those systems. Authorized servicers generally test the systems by blowing dry air (or nitrogen) through the distribution piping to ensure the integrity of piping. The test is intended to replicate the pressure that would be applied during an actual fire. Such tests are required to be performed every year. Filling cylinders, including test and agent cylinders, are an important part of servicing the systems. Thus, only authorized servicers are permitted to be involved in refilling test or agent cylinders for commercial fire-suppression systems. Oprandy’s had notice that it should not have worked on any system without being certified by the manufacturer in that particular system. For example, according to Mr. Scott, he was certified to work on Protex Series II systems (though he did not produce proof of certification)—which are among the most basic in the industry—and the Protex II manual is clear that *only* trained, Protex-certified individuals may service Protex systems.

There are both “dry” and “wet” fire-suppression systems. The industry standards for Dry Chemical Extinguishing Systems are set forth in NFPA 17. The industry standards for Wet Chemical Extinguishing Systems are set forth in NFPA 17A. NFPA standards are developed through a consensus-standards development process approved by the National Standards Institute. The NFPA an authoritative source that is routinely relied upon by virtually everyone in the fire-suppression industry, and particular standards are often incorporated by reference into local fire codes. The NFPA 17A Committee has “primary responsibility for documents on the design, installation, operation, testing, maintenance, and use of dry and wet chemical extinguishing systems for fire protection.” The Committee is comprised of individuals from all areas of the fire-suppression industry, including manufacturing, installation/maintenance, labor, end-user, and enforcing authority.

IV. KITCHEN KNIGHT SYSTEMS

The Kitchen Knight and Kitchen Knight II systems² are designed for commercial cooking appliances, including ranges and deep fryers. Nozzles are aimed at appliances, plenums, and ducts, dispersing a pre-determined amount of wet chemical agent. The nozzles are connected to piping, which feeds to a cylinder of wet chemical agent, pressurized to 225 psi. The system is triggered through a manual pull, or through an automatic detection system in the exhaust hood. As with other commercial suppression systems, Kitchen Knight Systems are periodically tested using compressed air or nitrogen to ensure integrity of the piping (often called the “balloon test,” “air test, or “puff test”).

The individuals authorized to test, service, and maintain Kitchen Knight Systems are called “Authorized Distributors.” To become an Authorized Distributor, one must undergo training and meet other requirements, and eventually be certified by the manufacturer. Such training includes an emphasis on following all relevant regulations and industry standards. There is no other designation that allows one to work on Kitchen Knight Systems. Mr. Scott stated that Oprandy’s is Pyro-Chem “authorized dealer,” but there is no such designation or terminology and has not been since at least the early 2000s. A company is either an Authorized Distributor or it is not. In addition to training—which, as indicated in the Kitchen Knight manual, does not cover every aspect of the system—Authorized Distributors have access to many resources that are important for safely servicing the system. We also have access to an 800 Technical Service number (that designers & technicians are encouraged to utilize) and regional personnel who can answer all matter of questions if we are ever in doubt (see, e.g., Kitchen Knight II Manual Cover Page in Appendix C). These practices are consistent with the industry. Although details can vary by manufacturer and system, all fire-suppression system manufacturers have certification requirements to ensure that only authorized servicers perform maintenance on the systems. Pyro-Chem Kitchen Knight Distributors are required to go through training every three years. New certificates are issues upon completion of training including passing a written test.

As a Wet Chemical Extinguishing System, the minimum industry standards relating to the Kitchen Knight Systems (including their component parts) are set forth in NFPA 17A (see NFPA 17A 1.1). In contrast, NFPA 10 sets forth the standards for portable fire extinguishers. (see NFPA 10 1.1).

² I disagree with Mr. Taranto’s opinion that the cylinder at issue necessarily came from the Kitchen Knight II system. The cylinder was manufactured in 1998, and the Kitchen Knight II system was not sold until 2001. Having examined Kitchen Knight I tanks in my shop, it appears that different versions of the Kitchen Knight I system came with different cylinders. So, while some Kitchen Knight I systems appear to have included DOT 4B175 cylinders, others seem to have included DOT 4BW225 cylinders. It would be unusual to include cylinders manufactured in 1998 for a system sold in 2001, because tanks frequently must be tested and recertified in compliance with DOT regulations. Nonetheless, as noted above, my opinions apply equally to both Kitchen Knight I and Kitchen Knight II systems.

V. CYLINDER-FILLING STANDARDS, PROCESSES, AND PROCEDURES

The industry is subject to extensive regulations related to servicing fire suppression systems and handling compressed gases. It is common knowledge in the industry that all users must, at a minimum, comply with industry regulations. We are reminded of this during trainings, and reprimanded for failing to do so. As a result, authorized servicers are familiar with the relevant regulations from OSHA, DOT, NFPA, the Compressed Gas Association (CGA), and local authorities. Manufacturers and authorized servicers work closely together to monitor changes in the regulations and ensure that authorized servicers are aware of relevant regulations and industry standards.

Filling agent and test cylinders is an important part of installing, servicing and maintaining Kitchen Knight Systems. Under NFPA 17A 6.4.4, at approval of installations and at required maintenance intervals (see NFPA 17A 7.1, 7.3), Wet Chemical systems' piping integrity must be verified by conducting "a test using nitrogen or dry air . . . at a pressure not to exceed the normal operating pressure of the pre-engineered extinguishing system." The existence of this test is extremely well-known in the industry. It is also common knowledge within the industry that the operating pressures of the agent and test cylinders are the same, and that the cylinders' pressurizing procedures are the same. It is common sense in the industry that any pressure-related manufacturer warnings that apply to agent cylinders apply to test cylinders, and vice versa.

Under NFPA 17A 1.7, only trained persons shall maintain Wet Chemical Extinguishing Systems, which includes the filling of system cylinders. In the context of the Kitchen Knight Systems, this means that only Authorized Distributors may perform servicing and filling of test cylinders. NFPA 17A 1.7 also notes that Authorized Distributors must be properly trained to service such systems. Under NFPA 17A 7.3, individuals performing maintenance on extinguishing systems—this includes individuals involved in refilling agent cylinders—must be trained and have passed a test that is acceptable to the authority having jurisdiction. So-called "buddy training" even by a certified individual is insufficient. The servicer must also possess a certification document confirming this, issued by the manufacturer or testing authority having jurisdiction. During training, Authorized Distributors are frequently trained to read, reread, and comply with industry regulations/standards and the manufacturer's design, installation, and maintenance manual (see NFPA 17A 3.3.18). They are also told to seek out the many resources provided by the manufacturer if a question arises as to how to properly service the product.

Under NFPA 17A 7.4, systems shall be recharged in accordance with the manufacturer's design, installation, and maintenance manual. As noted above, Kitchen Knight manuals are clear that "installation and maintenance of the system must conform to the limitations detailed in this manual and be performed by an Authorized Pyro-Chem Kitchen Knight [] dealer."³ This warning, which is among the very first things a user would read upon reviewing the manual, is another reminder of the obvious and well-known standard in the industry that *only* authorized persons may participate in servicing the system, including in filling agent cylinders. Chapter VI of the Kitchen Knight II manual applies to recharge of agent and test cylinders, and sets forth the steps one must

³ In the early 2000s, Pyro-Chem changed the "dealer" designation to Authorized Distributor. There is no practical difference between the two; such parlance frequently changes in the industry.

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follow after a discharge event occurs. Chapter VI again notes that only authorized and properly trained individuals may be involved in servicing the system. The steps for recharging are not specific to “agent” or “test” cylinders, and simply “detail the basic information necessary for proper recharge” of the system. Although some steps only apply to agent cylinders, others apply to cylinders generally. Individuals certified as Authorized Distributors of the Kitchen Knight system, and indeed I would think all individuals certified as authorized servicers of any commercial fire-suppression system, would read Chapter VI as applying to both agent and test cylinders.⁴ The manual states that “a pressure regulator must be used” “to determine when the charging pressure has been reached.” As would be obvious for anyone in the industry, this statement exists to warn against over-pressurization of cylinders during refilling, and reminds consumers to use pressure regulators during refilling to avoid over-pressurization. Because agent cylinders and test cylinders are intentionally identical in terms of pressure, Authorized Distributors know the warnings on the agent cylinders apply equally to test cylinders. As a warning to end-users of the system, the agent cylinders’ manufacturer name plate specifies that the cylinder should be maintained and tested according to the Kitchen Knight system manual and NFPA 17A, may only be handled by authorized distributors, and should be pressurized to 225 psi. That is, because the agent cylinder is left with the ultimate user of the system, who is less knowledgeable than the Authorized Distributor but important to servicing the system, certain warnings are included on a name plate by the manufacturer.

The Department of Transportation imposes many restrictions and requirements on 4BW cylinders like the one at issue. For example, 4BW cylinders periodically must be hydrostatically tested.⁵ To perform certain hydrostatic testing of cylinders, servicers are required to undergo rigorous licensing and inspection requirements and receive a DOT RIN number. And under NFPA 17A, 7.5.2.3, before being refilled, “containers bearing DOT . . . markings shall be retested or replaced in accordance with appropriate DOT . . . requirements.” As a result, Authorized Distributors are familiar with applicable DOT regulations and markings on cylinders. These universal DOT markings can be helpful for individuals who work with multiple different kinds of cylinders. For example, the “225” DOT marking on 4BW cylinders is a quick and helpful reminder of the cylinder’s psi rating, which, among other things, reminds the user of the maximum pressure to which the cylinder should be filled.

In addition to the requirements of NFPA and the DOT, OSHA imposes requirements on users and servicers of compressed gas cylinders, like my company and Oprandy’s. Employers are responsible for complying with the CGA’s rules on the safe handling of compressed gas (see 29 C.F.R. 1910.101, 1910.6).⁶ The subject cylinder was subject to OSHA and CGA requirements (CGA P-1-2015 at 1). The CGA warns that all users of compressed gas must be familiar with the

⁴ The manual specifically disclaims any responsibility for system recharges performed by any non-certified individual or individual who has not attended a Factory Certification Training Class.

⁵ Based on the lack of markings on the subject cylinder, it appears Oprandy’s did not follow DOT requirements with respect to hydrostatic testing.

⁶ Even putting aside OSHA’s requirements, the CGA is the leading source on industry standards and practices.

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properties and inherent hazards of the products they use and trained in the safe handling of compressed gases (CGA P-1-2015 at 1, 8). It places the duty of warning on employers to label cylinders (CGA P-1-2015 at 1, 6; CGA C-7-2014 at 2). It also imposes upon the employer the duty to avoid hazardous working conditions and ensure that only authorized users maintain the cylinders (CGA P-1-2015 at 7). The CGA also requires that the transfer of compressed gases from one container to another only be performed by the gas supplier or personnel who have been properly trained and qualified in transfilling, and that anyone involved in transfilling should be familiar with the necessary precautions to avoid the hazards of the product and comply with government regulations (CGA P-1-2015 at 8). The CGA places the burden of “providing detailed written operating instructions” on “the supplier of the transfill equipment.” (CGA P-1-2015 at 8). When transfilling from a high-pressure system to a low-pressure system where “the system rating can be exceeded,” the user must use “[a] suitable pressure regulating device” (CGA P-1-2015 at 11).

The above-listed standards are enforced by New York Fire Marshals, who are charged with enforcing the New York Fire Code. Under Section 901.6.1 of the Fire Code, wet-chemical extinguishing systems are to be maintained in accordance with NFPA 17A. Section 5303.2 requires cylinders to be manufactured and designed in conformity with DOT regulations. Section 5303.3.2 requires users to provide pressure-relief devices in accordance with CGA requirements, and section 53.4.2 requires cylinders to be marked in accordance with the CGA. Section 5305.1 requires compressed gas systems to be designed by individuals competent in such design, and section 5305.7 requires individuals to be qualified and follow CGA requirements to participate in transfilling. Authorized Distributors are, of course, expected, and indeed required, to follow applicable Fire Codes. This is another reason that Authorized Distributors are familiar with the above regulations.

Based on these regulations, industry practices, and common knowledge within the industry, the dangers of overfilling cylinders are well-known and obvious. To deal with these dangers, Authorized Distributors are expected to implement safety measures to prevent overfilling. It would be unthinkable for a servicer to refill a low-pressure system or test cylinder using a high-pressure cascade system capable of filling high-pressure cylinders at 4,000–5,000 psi, let alone without proper training or pressure-relief and safety devices. Indeed, the government requires testing only at twice the service pressure of such cylinders (49 C.F.R. 180.209).

VI. APPLICATION TO TARANTO REPORT

Based on the above standards and principles, Mr. Taranto’s report is flawed in several respects. Although I agree that it appears over-pressurization was the cause of the incident at issue, his attempts to assert that it was the fault of the manufacturer are simply incorrect from an industry perspective.

As an initial matter, Mr. Taranto is incorrect in asserting that “it is normal practice in the Fire Protection Equipment market” for unauthorized servicers to perform routine maintenance on pre-engineered fire-suppression systems. Although it appears Oprandy’s failed to follow the rules, it is a basic premise of the industry that only individuals and companies certified to work on a particular system may work on that system. We are warned repeatedly that this is the case, and if

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individuals market themselves as servicers of a particular system when they are not certified, manufacturers send cease-and-desist letters to force them to stop. I do not know where Mr. Taranto looks to find a “general duty to warn” individuals who should not be handling the product in the first place (Taranto Rep. § 7.2), but no such “duty” exists under the relevant industry standards or regulations.

As with all commercial fire-suppression systems, the manufacturer in this case is careful about who it allows to obtain and service its systems, including its cylinders (see, e.g., Kitchen Knight II Manual Cover Page in Appendix C). Thus, when designing and manufacturing its products, Pyro-Chem relies on its Authorized Distributors to use common sense and adhere to industry standards. Although Authorized Distributors are certainly capable of making mistakes, the practices implemented by Christopher Foust and Oprandy’s are simply antithetical to every instinct Authorized Distributors develop and are trained to have. Authorized Distributors would know to properly train employees as required by the manual and regulations, comply and be familiar with the relevant regulations, make manufacturer manuals available, post warnings and instructions, and take precautions to guard against the risk of over-pressurization including by using a calibrated pressure-relief valve. An Authorized Distributor would not use a high-pressure Cascade system to fill a low-pressure test cylinder, let alone without using a calibrated and properly engaged regulator and a safety cage. Indeed, an Authorized Distributor would not allow the filling of test cylinders at all without proper training and expertise. Perhaps above all else, an Authorized Distributor (or anyone servicing other brand manufacturers) would know not to set a regulator to fully open while the test cylinder is in a position to be filled, then attempt to manipulate the high-pressure system to jumpstart the flow of air. Authorized Distributors, as knowledgeable users of the product, are expected to guard against the risks that were present at Oprandy’s.

Mr. Taranto’s assertion that the warnings on the test cylinder were “imprecise” (3.5.4) is simply incorrect. On the contrary, the warnings here are clear, concise, and consistent with industry standards. Anyone who should be handling the cylinder at issue would know that the DOT markings signified that the cylinder was rated for 225 psi, and that filling much beyond that posed a risk of rupture. Moreover, Authorized Distributors are taught that if they are unsure about the meaning of a particular marking, they should refresh themselves using the manual or industry regulations, and if that doesn’t work, contact a regional manufacturer representative or customer-assistance line. To the extent Mr. Taranto suggests that the same information should be included on both the agent and test cylinder, he misapprehends the purpose of the agent-cylinder name plate (Taranto Rep. § 3.5.6). Manufacturers often provide labels even though they are not required to do so for the benefit of the less-knowledgeable end user, who is responsible for certain aspects of maintaining the system, including monthly inspections (see, for example, Range Guard Manual section 5-2.1; Kidde Manual section 5-2.1). Because the test cylinder is not left with the end user, it makes sense that the manufacturer did not also include such a warning on the test cylinder. The name plate on agent cylinders has nothing to do with warning Authorized Distributors. It was Oprandy’s responsibility to provide any further warnings on the cylinders for the protection of its employees. But even if this were not the case, Authorized Distributors would know that the warnings on an agent cylinder name plate apply equally to the test cylinder. But this is all a bit beside the point, because anyone in the industry handling the test cylinder would know that it is a low-pressure vessel, and that overfilling it could lead to rupture and serious injuries.

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Moreover, Mr. Taranto is incorrect in his assertion that the Kitchen Knight Manual is specific to the agent cylinder in discussing refilling procedures (Taranto Rep. §§ 3.5.5, 3.6.7, 5.2.7), and in his suggestion that NFPA 10 has some bearing on this case or what should have been included in the manual. NFPA 10 does not apply to Kitchen Knight component parts. And from an industry perspective, it is obvious that the instructions related to refilling pressures apply to both cylinders. Moreover, it does not appear as though there was any confusion as to the target psi of the cylinder. Although it is true that there are certain unique dangers present while servicing a cylinder containing potentially dangerous chemicals, the risk of over-pressurization is present for either cylinder. Mr. Taranto is also incorrect that the Manual somehow left confusion about the test cylinder's "intended use." As described above, test cylinders and balloon tests are commonplace in the industry.

Mr. Taranto is correct that, from an industry perspective, concise communication to the end user is critical (Taranto Rep. § 3.5.6). That is, I would prefer to see "225" stamped in compliance with DOT regulations on the side of a cylinder over a long manufacturer warning in small print that I know is intended for the end-user of the product. I disagree that the lack of any further warnings or training from the manufacturer could have contributed to "complacency." Warnings that simply reproduce industry standards would be superfluous. Warnings on common sense would be unhelpful and counterproductive in that they would cause individuals in the industry to be unable to decipher between what is and is not important to study and understand.

Mr. Taranto's criticism of Tyco for not providing "training" on test cylinders similarly misses the mark (Taranto Rep. § 5.2.9). There are a lot of ways to fill a cylinder, depending on the fill source and method. That is why the regulations place responsibility on the employer (and, to some extent, on the fill source during transfilling in terms of providing directions) to ensure that employees are properly trained before allowing them to transfill. What TFP does do during training—repeatedly, and like all manufacturers—is remind Authorized Distributors to follow the applicable industry standards and regulations, which themselves contain training requirements. In light of this, it is far from "impossible" for one to be properly trained to fill Kitchen Knight cylinders; indeed, it is required before handling the product.

For similar reasons, Mr. Taranto's opinions about the Kitchen Knight manuals are simply incorrect (Taranto Rep. § 6). The manual tells an Authorized Distributor all he or she needs to know to "safely design, install, and reliably perform the maintenance and recharge" of the Kitchen Knight system in accordance with its design, installation, and manual. As noted above, the relevant portion of the manual on recharging applies equally to the agent and test cylinders. Moreover, there is no need for manuals to restate information that is already known to Authorized Distributors—including standards and regulations from the NFPA, CGA, and DOT. If there is a question about something covered by the NFPA, for example, individuals in the industry know to consult the NFPA, not the manual. That is why the manual does not purport to cover all relevant information. Instructions on the balloon test, the use and maintenance of cylinders, and transfilling, for example, are covered by other industry standards and regulations. Incorporating all potentially relevant industry standards and regulations would make the manual extremely long, impossible to read, and practically useless.

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With respect to what he calls Tyco's "duty to warn of any danger from the intended or unintended but reasonably foreseeable use" of the cylinder, it appears to me that Tyco met any such "duty." I understand that there is no legal duty to warn of open and obvious dangers by reasonably foreseeable users of the product. To an Authorized Distributor—and indeed, to anyone with proper training or experience in the industry as an authorized servicer of any system—the dangers identified by Mr. Taranto were open and obvious. And as explained above, Oprandy's use of the test cylinder was anything but foreseeable. Indeed, Oprandy's and Christopher Foust should not have even been servicing the cylinder in the first place, let alone in the manner that they did.



Kurt Juliano

Vice President and Partner, All State Fire & Safety

APPENDIX A: CURRICIUM VITAE

Fire Protection Specialist

Kurt M Juliano
32 Whitestone Lane
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Professional Experience:

All State Fire & Safety

Buffalo, NY

Vice President/Partner

October 2008-Present

- Oversee all aspects of sales of Life Safety Systems for client base ranging from fortune 500 firms to local small businesses.
- Responsible for \$12.2 million in annual sales.
- Responsible for hiring, managing and training sales staff and field technicians across multiple divisions including: Fire Suppression, Sprinkler and Fire Alarm/Security.
- Responsible for preparing and delivering product presentations to AHJ's, general contractors, insurance companies and end users.
- Manage accounts for over 125 Burger Kings, 100+ McDonalds, National Fuel, Denny's, Absolut Care, University of Buffalo, Kaleida, 185 Tops Markets and many healthcare facilities.
- Serve as an expert witness for lawfirms & insurance carriers in regards to pre-engineered systems.

UTC Fire & Security

Buffalo, NY

Sr. Account Manager

December 2005-October 2008

- Business development through relationships with CEO's, CFO's, engineers, architects, general contractors and end users.
- Overaw growth of Pre-Engineered Division from 1.9. million per year to 2.8 million through cross-selling existing customers and targeting of client specific markets.
- Selected, managed and negotiated with vendors and sub-contractors.
- Trained newly hired sales reps.

Lane Fire & Safety

Buffalo, NY

Fire Protection Technician

November 1995-December 2005

- Inspected and installed pre-engineered fire suppression systems.
- Provided live hand portable "Educational Program" training to end users.
- Serviced and inspected hand portable fire extinguishers.

Professional Development:

Committee's

- Principle Committee Member NFPA 17A- Standard for Wet Chemical Extinguishing Systems 2015-present
- Principle Committee Member NFPA 17- Standard for Dry Chemical Extinguishing Systems 2015-present
- Ansul Distributor Council member 2020

Certifications:

- Ansul Certified R-102 Restaurant Fire Suppression System-Design, Installation, Recharge & Maintenance 1996-present
- Range Guard Restaurant Certified Fire Suppression System-Design, Installation, Operation & Maintenance 1997-present
- Badger Industry Guard Certified Fire Suppression System-Design, Installation, Operation & Maintenance 1997-present
- Pyro-chem Kitchen Knight II Certified Restaurant Fire Suppression System-Design, Installation, Recharge & Maintenance 1996-present
- Amerex Restaurant Fire Suppression Systems-Design, Installation, Maintenance & Recharge of KP/ZD 2012-present
- Amerex Industrial Fire Suppression Systems-Design, Installation, Maintenance & Recharge 2012-present
- Amerex Clean Agent Pre-Engineered Fire Suppression System-Design, Installation, Maintenance & Recharge 2014-present
- Kidde Wet & Dry Chemical Systems: Design, Installation, Operation & Maintenance 1996-2017
- City of Rochester Certificate of Fitness-Fire Extinguishers: E00403

Memberships:

- NFPA Building Fire Safety Systems member
- National Association of Fire Equipment Distributors (NAFED)
- National Association of Fire Equipment Distributors (NAFED)
- Western New York Alarm Association (WNYAA)

Expert Report of Kurt Juliano

APPENDIX B: MATERIALS CONSIDERED

- Expert Report of Tom Taranto
- OSHA Report
- Deposition transcripts of:
 - Franklin Buono (multiple)
 - Patricia Scott (multiple)
 - Brian Scott
 - Adam Menor
 - Curtis Harding
- OPRANDY-000048
- OPRANDY-000053
- OPRANDY-000202
- OPRANDY-000344
- OPRANDY-000746
- OPRANDY-000773
- OPRANDY-000916
- OPRANDY-000921
- OPRANDY-001230
- TFP-280809-000001
- TFP-280809-000061
- Badger-Range Guard Manual 5-2.1, 5-2.2 (see Appendix C)
- Kidde Manual 5-2.1 (see Appendix C)
- Protex II Manual Chapters 5–6 (see Appendix C)
- Kitchen Knight II Manual Cover Page (see Appendix C)
- Kitchen Knight agent and test cylinders
- Relevant authorities including:
 - NFPA 10 (2013)
 - NFPA 17A (2013)
 - New York Fire Code (2015)
 - CGA P-1-2015
 - CGA C-7-2014

Expert Report of Kurt Juliano

APPENDIX C: SELECT MATERIALS CONSIDERED



**Tyco Fire Protection Products is pleased to provide
you with this manual.**

Updates to this document are provided in electronic format only to individuals who hold current product training certification, are employed by an Authorized PYRO-CHEM Distributor and have provided an e-mail address at the time of training registration.

Updated material is available from an Authorized PYRO-CHEM Distributor only. Please visit www.pyrochem.com and use FIND A DISTRIBUTOR to locate an Authorized PYRO-CHEM Distributor to assist you.

Tech Svrce

800 862-6785

Maintenance**5-2.1 Monthly Inspection Procedure (by Owner)**

Refer to the cylinder nameplate for the proper maintenance instructions. In accordance with NFPA 17A and NFPA 96, make frequent inspections to ascertain that the system is operable. Also, be sure that nothing has occurred which would compromise the effectiveness of the system.

The following procedure is to be performed by the Owner of the system.

Table 5-2. Owner's Monthly Inspection

Checkbox	Procedure
<input type="checkbox"/>	Inspect all system components, agent distribution pipe, and conduit runs for physical damage and/or displacement.
<input type="checkbox"/>	Inspect all nozzles to see if foil seal caps (if applicable) are in place. Check for possible obstructions to the discharge of the wet chemical.
<input type="checkbox"/>	Inspect all detectors (Fusible-links and Thermo-bulbs) for contamination. If contamination is found, contact an authorized Kidde Distributor for service.
<input type="checkbox"/>	Inspect each Cylinder and Valve Assembly. The pointer on the pressure gauge should be in the "green" range. The cylinder should not show evidence of corrosion or damage.
<input type="checkbox"/>	Inspect manual pull stations are unobstructed and in clear view and labeled for intended use.
<input type="checkbox"/>	Inspect all tamper seals are intact and the system is in a ready condition.
<input type="checkbox"/>	Verify the inspection tag or certificate is in place and current.
<input type="checkbox"/>	A record of the monthly inspection is to be kept reflecting the date inspected, initials of the person performing the inspection, and any corrections required.
<input type="checkbox"/>	If wall mounted, the XV Control System must be tightly secured to the wall. If cylinder mounted, the XV Control System must be tightly bolted to the SVA. The Cam/Flag on the XV Control System indicator should point to the 'Set' position. The safety pin and seal wire on the local manual release handle should be in place. If no Remote Manual Release is installed, the path to the local manual release on the cylinder should be clear and unobstructed and within reach.
<input type="checkbox"/>	If any discrepancies are noted while making this inspection, DO NOT CONTINUE OPERATING HAZARDOUS PROCESSES OR TURN ON PROTECTED EQUIPMENT. Immediately contact an authorized Kidde Distributor for service and/or repair.
<input type="checkbox"/>	The hood, duct, and protected cooking appliances have not been replaced, modified, or relocated.



No other action shall be taken by the system owner other than visual. If further maintenance is determined necessary as a result of owner inspection, contact an authorized Kidde Distributor.



Do not operate hazardous processes or turn on protected equipment until the required system alterations are complete.



Any unauthorized alterations to the protected area or equipment, or to the wet chemical system, can render the fire suppression system ineffective or non-operational. Contact an authorized Kidde distributor if any modifications are contemplated.

5-2.2 Semi-Annual Service Procedure (By Authorized Badger Distributor Only)

All systems shall be inspected and serviced semi-annually by an authorized Badger distributor. If using an UCH Control System, start with Paragraph 5-2.2.1. If using the A+ Control Box, start with Paragraph 5-2.2.8.

Refer to NFPA 17A and NFPA 96 for all Semi-Annual maintenance.

Table 5-3. Semi-Annual Service Procedure

Checkbox	Procedure	Section
<input type="checkbox"/>	Preparation for Servicing and Testing	Paragraph 5-2.2.1
Functional Testing of the UCH Control System		
<input type="checkbox"/>	Test Mechanical Link Lines	Paragraph 5-2.2.6.1
<input type="checkbox"/>	Test Remote Manual Release	Paragraph 5-2.2.6.2
<input type="checkbox"/>	Test Solenoid (if applicable)	Paragraph 5-2.2.6.3
<input type="checkbox"/>	Inspection of High-Pressure Nitrogen Tubing	Paragraph 5-2.2.6.4
<input type="checkbox"/>	Perform Actuation Tests	Paragraph 5-2.2.7
<input type="checkbox"/>	Verify the Corner Pulleys and detector bracket conduit openings are free of grease	N/A
<input type="checkbox"/>	Check that the fan warning sign is legible and conspicuous (if not, replace)	N/A
<input type="checkbox"/>	Disposal of Cartridge	Paragraph 5-2.2.7.1
Functional Testing of the A+ Control Box		
<input type="checkbox"/>	Test Mechanical Link Lines	Paragraph 5-2.2.10.1
<input type="checkbox"/>	Test Remote Manual Release	Paragraph 5-2.2.11
<input type="checkbox"/>	Test Microswitches (if applicable)	Paragraph 5-2.2.12
<input type="checkbox"/>	Inspect 1/4-inch O.D. (6 mm) Copper Tubing	Paragraph 5-2.2.12.1
<input type="checkbox"/>	Perform Actuation Tests	Paragraph 5-2.2.13
<input type="checkbox"/>	Verify the Corner Pulleys and detector bracket conduit openings are free of grease	N/A
<input type="checkbox"/>	Check that the fan warning sign is legible and conspicuous (if not, replace)	N/A
<input type="checkbox"/>	Disposal of Cartridge	Paragraph 5-2.2.13.1

CHAPTER V SYSTEM MAINTENANCE

GENERAL

This chapter will detail the basic information necessary for proper maintenance of the Protex Series II Restaurant Fire Suppression System. However, before attempting any system maintenance, it is necessary to attend a Factory Certification Training Class and become certified to install and maintain the Protex Series II Restaurant Fire Suppression System. Because it is difficult to completely understand every aspect of an intricate pre-engineered system simply by reading the Technical Manual, Heiser Logistics will not be responsible for system maintenance performed by any non-certified person(s).

SEMI-ANNUAL MAINTENANCE

1. Check that the hazard area has not changed.
2. Check that the system has not been tampered with, i.e., nozzles removed, nozzles not aimed properly, piping not supported properly, blow off caps in place.
3. Check the entire system for mechanical damage.
4. Check all nozzle orifices to make certain they are not plugged. Replace blow off caps or O-ring if necessary.

! CAUTION !

Before continuing, remove the cover from the control head and insert the safety pin in the hole in the slide plate above the latching arm. This will secure the system, preventing accidental discharge.

5. Disconnect the control head from the tank, or disconnect the pneumatic tubing from the control head
6. Remove the carbon dioxide pilot cartridge in the control head.
7. Inspect the pulley elbows for excessive grease buildup. Clean elbows if necessary. Replace fusible links.
8. Remove the safety pin from the slide plate. Actuate the control head by cutting the "S" hook at the terminal detector to ensure it is functioning properly. Make certain the gas shut-off valve operates correctly. Reset the link detection line and gas valve, then activate the remote pull station and ensure that the control head and gas valve operate correctly.
9. Reinstall the carbon dioxide pilot cartridge, and replace the control head cover. Replace the tamper seal on the remote manual pull.
10. Reconnect the control head or pneumatic tubing,
11. Check the agent cylinder (and, if part of the system, the PAC100) for corrosion, excessive pitting, structural damage, fire damage, or repairs by soldering, welding, or brazing. If any such damage or repairs are found, hydrostatically test the equipment to the factory marked pressure, per NFPA-17A 5-5

12. Verify that the wet chemical cylinder (and, if part of the system, the PAC100) are pressurized as intended.

ANNUAL MAINTENANCE

1. Inspect as per semi-annual maintenance instructions. Do not reconnect control head at this time.
2. Disconnect the discharge piping from the valve outlet. Using air or nitrogen, blow out the piping. Replace all nozzle caps.
3. Replace the carbon dioxide pilot cartridge.
4. Replace the control head cover and tamper seal.
5. Reconnect the control head.

12-YEAR MAINTENANCE

Along with the required annual maintenance requirements, the cylinders (and, if part of the system, the PAC100) must be removed from the system, properly discharged, and hydrostatically tested to the factory marked pressure, per the requirements of NFPA-17A 7-5. The tank should be refilled with fresh agent, per the recharge section of this manual.

CHAPTER VI SYSTEM RECHARGE

GENERAL

This chapter will detail the basic information necessary for proper recharge of the Protex Series II Restaurant Fire Suppression System. However, before attempting any system recharge, it is necessary to attend a Factory Certification Training Class and become certified to install, maintain, and recharge the Protex Series II Restaurant Fire Suppression System. Because it is difficult to completely understand every aspect of an intricate pre-engineered system simply by reading the Technical Manual, Heiser Logistics will not be responsible for system recharge performed by any non-certified person(s).

SYSTEM CLEANUP

! CAUTION !

Before attempting any cleanup, make certain that all fuel sources to the equipment to be cleaned have been shut off. Make certain that the exhaust hood and all appliance electrical controls have been de-energized to avoid any chance of electrical shock resulting from the cleaning process of electrically conductive alkaline liquid agent and/or its residue.

Make certain all surfaces to be cleaned have cooled down to room temperature.

Do not use water to clean any appliances that contain hot grease or cooking oils. Doing so may result in violent steaming and/or spattering.

SYSTEM RECHARGE

NOTE

Determine the cause of system discharge and correct immediately before performing system recharge.

1. After discharge, inspect the entire system for mechanical damage. If the tank has sustained any mechanical damage, it must be hydrostatically tested before refilling.
2. Disconnect the 1/4 in. actuation tubing or the control head from the top of the tank valve.
3. Relieve the pressure from the top chamber of the tank valve by depressing the core of the valve in the valve cap assembly. By performing this operation, the valve will close.
4. Slowly remove the valve and siphon tube. If there is any residual pressure left in the tank, it will bleed out through the pressure relief slot in the valve threads.
5. The complete piping system must be flushed after a discharge. Flushing solution, Part No. 79656, must be used when flushing the system. The solution is shipped in a 32 oz. container. An L1600 tank requires 1/2 container of solution. An L3000 tank requires 1 container of solution. An L4600 requires 1-1/2 containers, and an L6000 requires 2 containers. To prepare the system for flushing:
 - a. Pour the required amount of flushing solution into the tank.
 - b. Fill the tank approximately half full with warm, clear water. Agitate the tank for a few seconds and then add more warm water to bring the level to the required fill line using the measuring stick, Part No. 551039.
 - c. Reinstall valve and pickup tube and pressurize tank to 225 psi and reinstall to piping network.
6. With nozzles in place, attach control head and manually actuate the tank. Allow the tank to completely discharge through the piping network.
7. After the discharge is completed, the entire piping network must be blown out with air or nitrogen until no more mist is visual coming out of the nozzles.
8. Remove, clean, and reinstall all nozzles.
9. Remove the tank from the system. Slowly remove the valve and siphon. If there is any residual pressure left in the tank, it will bleed out through the pressure relief slot in the valve threads. The valve and pressure regulator (located in outlet of valve) must be cleaned and rebuilt after each discharge. To rebuild the valve, use rebuilding kit, Part No. 490420698. To rebuild the pressure regulator, use rebuilding kit, Part No. 551061. Each kit includes an instruction sheet listing detailed rebuilding instructions.
10. Fill tank with required amount of Protex agent, Part No. RL1600 or RL3000.

NOTE

During filling, the agent temperature should be 60 °F to 80 °F (16 °C to 27 °C).

Maintenance

Range Guard (Badger)

5-2.1 Monthly Inspection Procedure (by Owner)

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<input type="checkbox"/>	Inspect each Cylinder and Valve Assembly. The pointer on the pressure gauge should be in the "green" range. The cylinder should not show evidence of corrosion or damage.
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<input type="checkbox"/>	Inspect all tamper seals are intact and the system is in a ready condition.
<input type="checkbox"/>	Verify the inspection tag or certificate is in place and current.
<input type="checkbox"/>	A record of the monthly inspection is to be kept reflecting the date inspected, initials of the person performing the inspection, and any corrections required.
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Do not operate hazardous processes or turn on protected equipment until the required system alterations are complete.



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